



## CSCI 32 - Web Development II

### Catalog Description

**Transfer Status:** CSU/UC

**Prerequisite:** CSCI 31

**Unit(s):** 3.00

**Lecture:** 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

**Lab:** 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

**Total:** 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

**Course Description:** In this course students learn to develop applications for the World Wide Web. Topics include the fundamentals of web server platforms, programming languages for web development, using databases to persist information for a web application, and web application frameworks. Students will design, implement, and deploy a complete web application using a current programming language, database technology, and web server.

### Objectives

Upon successful completion of this course, the student should be able to:

1. Design and implement a complete web application using a current programming language, database technology, and web server platform.
2. Deploy and maintain a complete web application on a web server.
3. Identify, compare, and contrast the main features of the programming languages and database technologies that are most commonly used by web developers.
4. Evaluate web application frameworks in terms of their underlying technologies, architecture, and suitability for use in different web applications.

### Course Content

#### Topic Titles / Suggested Time Topic

##### Lecture

| <u>Topics</u>                               | <u>Lec Hrs</u> |
|---------------------------------------------|----------------|
| Programming languages for web development   | 2.00           |
| Databases for web applications              | 4.00           |
| Designing a database for a web application  | 4.00           |
| Creating a database for a web application   | 4.00           |
| Programming a web application               | 12.00          |
| Securing a web application                  | 2.00           |
| Deploying and maintaining a web application | 2.00           |
| Web application frameworks                  | 4.00           |
| <b>Total Hours:</b>                         | <b>34.00</b>   |

##### Lab

| <u>Topics</u>                               | <u>Lab Hrs</u> |
|---------------------------------------------|----------------|
| Programming languages for web development   | 3.00           |
| Databases for web applications              | 6.00           |
| Designing a database for a web application  | 6.00           |
| Creating a database for a web application   | 6.00           |
| Programming a web application               | 18.00          |
| Securing a web application                  | 3.00           |
| Deploying and maintaining a web application | 3.00           |
| Web application frameworks                  | 6.00           |
| <b>Total Hours:</b>                         | <b>51.00</b>   |

### Methods of Instruction

- A. Collaborative Group Work
- B. Demonstrations
- C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture

- D. Lecture
- E. Multimedia Presentations
- F. AS in Computer Programming

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## Methods of Evaluation

- A. Quizzes
- B. Projects
- C. Class participation
- D. Mid-term and final examinations

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## Examples of Assignments

### Reading Assignments

1. Read the article on cross-site scripting (XSS) provided by the instructor. Pay particular attention to the source(s) of XSS vulnerabilities and solutions for this problem. Be prepared to discuss XSS problems with respect to your web application in class.
2. Select and read a minimum of two articles on use cases and web design provided by the instructor. Make a list of the use cases you believe will be the most common in your web application and be prepared to share your list in class.

### Writing Assignments

1. Using the programming language, sample data set, and database schema assigned by the instructor, write the functions needed to (1) validate a set of POST data, (2) prepare a SQL statement to insert the data into the database, and (3) execute an SQL query to complete the insert.
2. Based on the small business scenario provided by the instructor, prepare a 1-2 page proposal for a web application for the small business. Your proposal should include the technologies you will use and rationale for each.

### Out-of-Class Assignments

1. Prepare regular expressions that can be used to identify and validate phone numbers and email addresses in your web application. Test your regular expressions on the data set provided by the instructor. Be prepared to present your regular expressions in class.
2. Research a minimum of three web application frameworks, each written in a different programming language. Prepare a 5-10 minute multimedia presentation to compare and contrast the main features of the frameworks you select. Be prepared to present what you have learned to the class.

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## Recommended Materials of Instruction

Duckett, Jon. (2022). PHP & MySQL: Server-side Web Development. *Wiley*, 1st. 978-1119149224.

Vincent, William S. (2020). Django for Beginners: Build Websites with Python and Django. *WelcomeToCode*, 1st. 978-1735467207.

Delamater, Mary. (2020). Murach's ASP.NET Core MVC. *Mike Murach & Associates*, 1st. 978-1943872497.

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## Minimum Qualifications

Computer Science (Masters Required)  
Computer Information Systems

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**Created/Revised by:** Sathrum, Luke

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